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Research Highlights:

1. A new texture descriptor named LNIP is proposed for image retrieval.
2. It is based on the local neighborhood intensity difference.
3. LNIP_S focuses on the sign and LNIP_M focuses on the magnitude information.
4. The method has been tested on three texture and one face database.

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Abstract

In this paper, a new texture descriptor based on the local neighborhood intensity difference is proposed for content based image retrieval (CBIR). For computation of texture features like Local Binary Pattern (LBP), the center pixel in a 3×3 window of an image is compared with all the remaining neighbors, one pixel at a time to generate a binary bit pattern. It ignores the effect of the adjacent neighbors of a particular pixel for its binary encoding and also for texture description. The proposed method is based on the concept that neighbors of a particular pixel hold significant amount of texture information that can be considered for efficient texture representation for CBIR. The main impact of utilizing the mutual relationship among adjacent neighbors is that we do not rely on the sign of the intensity difference between central pixel and one of its neighbors (I_i) only, rather we take into account the sign of difference values between

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